RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHRISTOPHER J. MISORSKI, KEVIN R. ANDERSEN,
MITESH B. SHETH, and RICHARD A. DAVIS

Appeal 2006-3292
Application 10/780,342
Technology Center 3600

Oral Hearing Held: October 25, 2007

Before MURRIEL CRAWFORD, LINDA E. HORNER, (telephonically), JOSEPH A. FISCHETTI, Administrative Patent Judges

ON BEHALF OF THE APPELLANT:

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The above-entitled matter came on for hearing on Thursday, October 25, 2007, commencing at 10:00 a.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, 9th Floor, Hearing Room A, Alexandria, Virginia, before Lori B. Allen, Notary Public.

PROCEEDINGS

JUDGE CRAWFORD: Mr. Taken, we have two APJs in the back that are observing. We have one Judge that is on the phone, Judge Horner.

JUDGE HORNER: Good morning.

MR. TAKEN: Good morning.

Initially, applicant would like to clarify that in view of the KSR case handed down this year by the Supreme Court and the PTO examination guidelines and obviousness published this month in the *Federal Register*, we believe the examiner has met his burden and the burden has shifted to applicant now. Also, in view of those cases, we would like to address only four claims: claims 1, 12, 34 and 35, which I will go through momentarily.

We would also like to present only three arguments. The first argument is long-felt, unresolved need and its apparently contradictory corollary of simplicity, which is in the brief.

JUDGE CRAWFORD: This argument is in the brief?

MR. TAKEN: Yes, ma'am.

The second argument is that even if the references are combined, the result is still not the claimed subject matter, which argument is in the brief.

The third argument is that the references teach away from the invention, which argument is not in the brief. Accordingly, Rule 41.47, sub (e), sub(2) requires that there be good cause; and, I would respectfully ask the board for permission to present that argument.

JUDGE CRAWFORD: Well, you can present it. It doesn't mean that we would consider it.

MR. TAKEN: Thank you.

Claim 1 calls for a marine propulsion device comprising a metallic gear housing structure and a polymer layer over-molded on the gear housing structure. This is directed to an invention, which relates to a new use of a known technology. The known technology is polymer materials and over-molding techniques. Those in the art are aware of many products on which a polymer over-molded layer is used to seal or protect a surface of an object. The new use of such known technology is a marine propulsion device having a metallic gear-housing structure, namely over-molding a polymer layer on such structure.

We've admitted in the brief two things -- marine propulsion devices with metallic gear housing are known and over-molded layers on various structures are known in the prior art. An issue presented for review is whether it would have been obvious to one with ordinary skill in the art at the time of the invention to utilize an over-molded layer on the metallic gear housing structure. The references cited in the spec are at least 10 years old. We feel there is long-felt, unmet need. We feel that the invention itself is so simple, so straightforward, so apparent, coupled with the long-felt need, leads to a conclusion of non-obviousness.

JUDGE CRAWFORD: You have evidence of long-felt need in the record?

MR. TAKEN: Just the age of the references.

JUDGE CRAWFORD: The age of the references.

MR. TAKEN: Yes, they're at least 10 years old, and I think metallic gear case structures that are painted are, of course, much older than that. The references cited in the spec are at least 10 years old: the de Blois reference; the '014 references was filed in '96. So with that length of time

crowded our mature art. We feel that is actually the simplicity of the invention coupled with the long-felt need, coupled with the crowded art, coupled with the clear need is actually probative of non-obviousness.

JUDGE FISCHETTI: Counsel, I have a question here. You talked a little bit about new use for an old product. Correct?

MR. TAKEN: New use of a known technology.

JUDGE FISCHETTI: Okay. I look at your claims, and they are article claims. I don't see a method. Is that correct? Is something restricted out or were these?

MR. TAKEN: No. They're article claims.

JUDGE FISCHETTI: They're article claims, right?

MR. TAKEN: Yes, it's an over-molded structure. Yes, sir.

JUDGE FISCHETTI: New use constitutes methodology, no?

MR. TAKEN: Well, I think the product, if the product involves the new use and the new use is not obvious.

JUDGE FISCHETTI: So, my understanding now of what would be a product by process, probably, claim, is that I need to see or we need to see something that shows that that process imparts a distinctive, structural characteristic on that final product, can you show me in claim 1 at least where I see that distinctive characteristic recited?

MR. TAKEN: I think the limitation of over-molded is the distinction.

JUDGE FISCHETTI: But that's not the final product, I mean.

MR. TAKEN: Well, I think that's an adjective modifier, and that certainly limits and describes and defines the product. A painted layer is not an over-molded layer.

JUDGE HORNER: How does it differ?

MR. TAKEN: The main difference is in the thickness and, of course, the structural characteristics.

JUDGE CRAWFORD: Do you have evidence of this difference in the record?

MR. TAKEN: Yes, hm-hmm.

JUDGE CRAWFORD: In the record, there's evidence in the form of what?

MR. TAKEN: The main reference is Takasaki, 6,312,821. And throughout the specification he talks about the primer layer. Now, there's a formation layer, a primer layer and a topcoat layer. The primer layer at various places, for example, column 4, line 43, column 10, line 3, talks about the undesirability of going over 50 microns. And an over-molded layer as defined in the spec, and this is common, is typically 3,000 microns. It's two orders of magnitude difference.

JUDGE FISCHETTI: And I see nothing about thickness in this claim.

MR. TAKEN: Well, over-molded is definitional.

JUDGE FISCHETTI: I see over-molded as the way it got made as opposed to a dimple, for example, if it came out of a certain type of mold and it had a dimple that was the distinctive characteristic of that mold. Then I say that article now bears that characteristic. But to call it by its adjective as you say, you know, I don't see the structural limitation there.

MR. TAKEN: I believe one of ordinary skill in the art, when they see the term over-molded layer, adjective and non, they clearly understand it's not painted. They clearly understand it's in the area of 3,000 microns, not 50 microns as a painted layer.

1 JUDGE HORNER: Are you informing that Takasaki is painted
2because of the thickness, or does Takasaki say it's painted?
3 MR. TAKEN: I don't recall if Takasaki uses the word "painted."
4 JUDGE HORNER: So we don't know how the primer layer is
5supplied in Takasaki.
6 MR. TAKEN: Well, I believe I always understood it and I think one
7of ordinary skill in the art would understand it to be painted on there.
8 JUDGE HORNER: Why?
9 MR. TAKEN: Because of that thickness.
10 JUDGE HORNER: Okay.
11 MR. TAKEN: The thickness ranges -- there are various tables -- the
12claims, etcetera. They go from 5 microns to 50 microns is the upper limit.
13 JUDGE HORNER: Right.
14 MR. TAKEN: And we're 3,000 microns.
15 JUDGE HORNER: But, you're using this as evidence of a structural
16distinction between painting and over-molding. Takasaki doesn't say that it's
175 to 50 microns thickness is the result of painting. So could it be over-
18molded at 50 microns?
19 MR. TAKEN: No.
20 JUDGE HORNER: It's not possible?
21 MR. TAKEN: No. Over-molding -- you can't over-mold something
22at 50 microns. You're up on the area of 3,000 microns.
23 JUDGE HORNER: Do you have evidence of that in the record?
24 MR. TAKEN: Just definition of over-molding. Over-molding, of
25course, you have to put an object in a mold -- typically, two halves -- bring it

together and inject molten resin. One of skill in the art here is over-molded, that's what they understand.

JUDGE FISCHETTI: Well, in addition to the painting primer in Takasaki, there is also the topcoat layer, right?

MR. TAKEN: Yes, and there's also a formation film under that. And I've looked for thicknesses of those films. I can't find it.

JUDGE FISCHETTI: Yes, I don't see it either; but it didn't look like there was any objection made to the examiner's position that her take was a polymer, in that topcoat layer, in the record. And all that was pursued from the arguments from counsel at that point were that the over-mold step that was relied on in the secondary reference couldn't be taught. But it looks like there was no objection in the record, at least from my standpoint that 24 was in fact the polymer that you've been claiming.

MR. TAKEN: Yes, sir. And that's the permission that I would like to argue that the reference teaches away. You're right. It's not in the brief.

JUDGE HORNER: Well, you've noted the rule says that you can make that argument for good cause. What's the basis for the good cause?

MR. TAKEN: I believe that the KSR case by the Supreme Court this year and now the examination guidelines by the office this month have taken away many arguments of applicant, one which they did not take away is the teaching away argument.

JUDGE HORNER: Well, our senior judge here has indicated that.

JUDGE CRAWFORD: You could have made this teaching away argument in the brief. Isn't that correct?

MR. TAKEN: That's correct.

JUDGE CRAWFORD: I'm not going to stop you from argument, but we are confined to what has already been argued.

MR. TAKEN: Yes, ma'am. Previously we did not feel it was needed in view of the state of the law pre-KSR. But, post-KSR, many of the arguments available to applicant are just no longer available. And so many of the points made in the brief, I believe, are overruled by KSR.

JUDGE CRAWFORD: Well, we'll take it under advisement.

MR. TAKEN: Thank you.

I believe that Takasaki then, '821, teaches away from over-molding, because of the thickness of the limitation. The order of magnitude towards the magnitude differences is a difference in kind, not just degree. You know, 50 microns versus 3,000 microns, I believe, is not just a difference in degree.

JUDGE CRAWFORD: See, I don't know where you're getting this fact about the thicknesses. See, I would be looking for declaratory evidence in the record to show that a person with ordinary skill in the art would recognize these thicknesses with a particular process.

MR. TAKEN: The specification mentions the typical thickness of over-molding, page 10, lines 2 and 15. And then over-molding itself, I believe, is a definitional term following that type of definition -- injected polymer resin having a range.

JUDGE FISCHETTI: So it's a definitional term and not a structural characteristic then.

MR. TAKEN: Yes, sir.

JUDGE HORNER: But where in Takasaki does it teach away? I mean, it's got different thicknesses, but the teaching away requires more than

just a difference. It requires that one would have been discouraged from over-molding or it maybe discredits over-molding. So where is that in the Takasaki reference?

MR. TAKEN: In column 4, lines 44 through 46, there's an indication that also for sufficiently cover the unevenness of the film thickness. The film thickness is thicker the better, but when the film thickness exceeds 50 microns, it becomes uneconomical. Then in column 10, line 7, it goes through the thickness. This is the primer layer, not thicker than 50 microns.

JUDGE HORNER: And again it's pointing to economy as being the reason.

MR. TAKEN: Yes.

JUDGE HORNER: So, it's less desirable. You're saying, the thicker the better, but it's less desirable to go over 50 because then you're spending more money.

MR. TAKEN: I believe that's what he's saying. Yes, ma'am. And, in turn, I believe that one of skill in the art when he sees that would not think of over-molding.

JUDGE FISCHETTI: I'm still, counsel, wondering why Takasaki with its understanding that there is a painted layer underneath it, but still doesn't meet the claim limitations by virtue of its top layer.

MR. TAKEN: Well, I can't find the thickness. The drawing would appear to show that they're all the same thickness. So if you extrapolate, they're each 50 microns. That's 150 microns versus 3,000 microns. We're still an order of magnitude difference. Other than that there's no specific indication.

JUDGE FISCHETTI: But then again I still haven't seen a distinctive structural characteristic, because now you tell me that over-molding is a definitional term, not a structural term. So I'm left basically with a claim that has no structural feature of the way it was made and Takasaki shows me that I have a topcoat layer made of a polymer. So it would seem to me that Takasaki answers claim 1.

MR. TAKEN: May I go into claim 12?

JUDGE FISCHETTI: Sure.

MR. TAKEN: Thank you.

Claim 12 depends from clam 1. It requires that the thermal coefficient of expansion of the metallic gear housing structure is generally similar to the thermal coefficient of the polymer layer. The reason I believe this is unmet by the references and that the references teach away is in de Blois, 5,718,014. Column 9, line 42, indicates that the material of the shell, which is the under layer, and the cover, which is over-molded on it, have similar melting points. The cover 24 is Santoprene.

The shell, I could not find any mention of what the material is. However, in the alternate embodiment mentioned in figure 11A, the housing, the under member, is Santoprene.

JUDGE CRAWFORD: Now, is this argument in your brief?

MR. TAKEN: No, ma'am. This is teaching away, and it's why the references, even if combined, do not meet the claimed subject matter.

JUDGE FISCHETTI: Counsel, did the examiner though opt to take a view that this was a designed choice factor as opposed to drawing it from the references?

MR. TAKEN: Yes.

JUDGE FISCHETTI: So this would be an argument that if you're making for the examiner here?

MR. TAKEN: No. No. I believe when the reference indicates that the under layer and the over-molded layer have to have similar melting points. Now, to go over and apply that to the claimed structure, first of all, you have to recognize that you can apply this teaching to a device, which does not have similar melting points. The metallic gear case does not have the same melting point as the over-molded layer. That's the first act of cognition. So let's just say that's within the ordinary skill for argument's sake.

The second cognitive act then, on top of that, is that even though the materials have different melting points, when you say that's within the skill, you still have the cognitive act of a selection step of using similar thermal coefficients of expansion. So that's a two-step process to get from what's in this reference to the claimed subject matter.

JUDGE HORNER: Well, wouldn't it make sense to anybody that's engineering a polymer to over-mold onto a metal piece that you wouldn't want the coefficient of expansion of the underlying piece to be different or to cause cracking or breaking apart of the over-molded piece, because they are different. I mean, that's the logic the examiner used; and, it seems pretty reasonable. Do you disagree with that logic?

MR. TAKEN: No. I think normally that's quite reasonable. I think when you can identify the source of a problem, many times the solution is obvious. Even though this identification problem doesn't necessarily teach the solution, but many times, once you can identify the source of the problem, yes. The solution is obvious.

JUDGE HORNER: So, you say you're claiming that the appellants were the first ones to discover that these different coefficients of thermal expansion were the route of a problem of instability of the polymer over-molded layer?

MR. TAKEN: No. That was no. I think what is probative of non-obviousness is the fact that even though the problem was known, the properties of the metal and polymer were known, we've got at least a 10-year gap here of unmet need -- longstanding, unresolved need. Simple solution: so straightforward, so apparent; crowded art, but yet, we have this long gap where nobody's ever over-molded a polymer layer on a metallic, marine gear case.

I think that secondary consideration is still available under KSR. As I said, I think the examiner --

JUDGE HORNER: But couldn't a long-felt need be just for the purpose that was noted in Takasaki -- cost? Couldn't that be the reason? And that's not really a long-felt need. That's just economics.

MR. TAKEN: Well, I don't know. The point is it wasn't. You know, there was a long gap not done.

JUDGE HORNER: Because it wasn't economically feasible, perhaps. But we don't have any evidence in the record of others trying to solve the problem and failing for 10 years. We just have these two references that date back 10 years.

MR. TAKEN: That's right. We just have the age of the references themselves. That in combination with simplicity in combination with a crowded art, in combination with a mature art, I don't think the level of skill is any less, but sometimes in mature arts if people are focused on one thing,

sometimes it is actually the creative step which makes them jump "out of the box." We just don't know.

JUDGE FISCHETTI: Has this product been out yet?

MR. TAKEN: I don't know.

JUDGE FISCHETTI: I only say that, because if it were, you'd have great marketing results that you could put into some sort of declaration for us to state it would jump off the page. Right?

MR. TAKEN: Right. May I go on to claims 34 and 5?

JUDGE CRAWFORD: If you are not long, quickly.

MR. TAKEN: Thank you very much.

Claim 34 requires either a skeg or a marine-drive gear case. And the rejection was on Takasaki and de Blois. I would simply point to de Blois, column 10, line 37, which requires that the cover -- that's the over-molded cover -- have a non-slippery surface. Note: this is opposite; this teaches away from. A skeg and a gear case have to have smooth surfaces to reduce drag. Further, in 39 of the same reference, same column, requires the cover have a resilient, deflectable surface. Again, this is just the opposite of what you need, particularly in a skeg and in a gear case. You do not want resilient deflection. That changes the propulsion characteristics, changes the hydrodynamics on the marine drive.

Finally, Claim 35 requires a hydrodynamic shape. There were three references to reject this claim: Rafferty, 5,656,376. Rafferty again, even if you combine these references, you still do not reach the claimed subject matter, because the Rafferty reference teaches premolded parts, which are later assembled and attached to the Marine drive. That is not what is claimed here.

Thank you very much.

JUDGE CRAWFORD: All right. Thank you.

Judge Horner?

JUDGE HORNER: No further questions. Thank you.

JUDGE FISCHETTI: Thank you.

[The hearing was concluded.]